



BITUMINOUS MATERIALS FIELD SECTION 1015

1015.1 SCOPE. To establish procedures for inspecting, sampling, and accepting bituminous materials at their source and destination, and to establish a list of qualified bituminous material source.

1015.2 APPARATUS. All sample containers and equipment used in sampling bituminous materials are to be clean, dry, and free of all contaminants. The apparatus consists of:

- (a) Sample containers, one quart [1 L], friction or screw top type cans and one gallon [4 L] plastic bottles.
- (b) Appropriate thief, dipper, or sampling device to obtain a representative sample.
- (c) Labeling materials.
- (d) Rule with suitable graduations to accurately measure the material to be inspected.

1015.3 PROCEDURE.

1015.3.1 Inspection. The list of qualified sources of asphalt emulsions, cutback asphalt and asphalt filler is shown in [FS-1015 Table 1](#) of this Manual. The list of qualified sources for performance graded asphalt binder is shown in [FS-1015 Table 2](#) (QC/QA Approved Sources) of this Manual.

1015.3.1.1 Inspection at the refinery, terminal, or emulsion plant will consist of the sampling and testing of shipments and storage tanks. Samples of performance graded binder are to be taken from storage tanks or blenders at the rate of one per month for each grade of binder that is currently being shipped to department projects. Samples of cutback asphalt and asphalt filler are to be taken at random at a rate of not less than ten percent of both storage tanks and shipments. Emulsion samples are to be obtained at a frequency of not less than one sample for approximately each 100,000 gallons [375,000 L] shipped to MoDOT. Emulsion samples may be taken from storage tanks or shipments. All samples taken will be tested by Department personnel. Reference should be made to [Laboratory Sec 1015](#) of this Manual for procedures to be followed on testing and reporting bituminous materials.

1015.3.1.2 Prior to shipment of performance graded binders, the refinery or terminal must comply with the QC/QA requirements of Specification Sec 1015. An approved quality control plan must be on file in the source district as well as at Project Operations- Materials. Prior to shipment of emulsified asphalt, cutback asphalt, or asphalt filler from storage tanks, the refinery, terminal, or emulsion plant is to furnish the Department representative with certified test results for the material being shipped. When this material is furnished from automatic blenders, the supplier is to perform all required tests for each grade of material at least every two weeks and shall furnish certified test results to the Department representative.

For suppliers of performance graded binders who ship infrequently, the district, with concurrence from the Chemical Laboratory Director, may establish an arrangement with the supplier to suspend inspection activities if that supplier is not anticipating shipping to MoDOT work, until such time that binder is to be shipped to our work. In these cases, the supplier is required to continue quality control inspection at their facility in accordance with their quality control plan and to continue to submit

monthly reports of QC testing to the district. These same arrangements are allowed through the winter months for normal suppliers when no binder is being shipped, without the concurrence of the Chemical Laboratory Director. Use of this procedure will require that the district request notification by the supplier well in advance of resuming binder shipments to MoDOT work, so that normal inspection can be resumed. This option is not allowed for suppliers who anticipate shipping binder to department work more frequently than once every three months. (Note that this option is intended to be used for suppliers located a long distance from the district responsible for inspection and who wish to be approved to supply performance graded binders, but do not anticipate shipping to MoDOT work on a regular basis.)

1015.3.1.3 The quantity of material in truck shipments is to be determined in accordance with Specification Sec 1015 for gallons [L] and from the scale weights [masses] shown on the bill of lading, manifest or truck ticket for pounds [kg]. The volume of material in a railroad car is determined by measuring the level of the material below the dome or in the dome, as the case may be, to the nearest 1/4 inch [5 mm]. The measurements are taken to the oil level and not the foam level. With these measurements, the volume can be determined from the outage tables that are available from the manufacturer for all calibrated railroad cars. The temperature of the material in degrees Fahrenheit [Celsius] is obtained at the time of the measurement of material in the car. This temperature is used to convert the volume to 60F [15.6 C].

1015.3.1.4 When weather conditions make it necessary to divert material to another project or destination after the truck has left the refinery, the contractor or supplier is to contact the district Operations Engineer or Resident Engineer where the material is to be used. The engineer is to immediately notify the inspector at the refinery, where the shipment originated, that the material has been diverted. Upon such notification, the inspector is to make the necessary corrections in the report to reflect the change in destination of the material.

1015.3.1.5 Inspectors performing bituminous inspection are to:

- (a) Obtain random, representative samples in accordance with the applicable requirements of this Section. These samples are to be promptly submitted to the Laboratory, shall be reported through SiteManager and shall contain all pertinent information.
- (b) Verify that the supplier of the performance graded binder is shown on the list of Qualified PG Binder Sources and Labs, [FS 1015 Table 2](#) of this Manual.
- (c) Check the required monthly report of quality control activity for performance graded binder to verify specification compliance for all grades shipped to department projects during the period covered by the report, initial and date the report, then send one copy to the Chemical Laboratory Director. If a monthly report shows test results that do not comply with specification requirements, the inspector is required to verify that none of the affected material has been shipped to department projects and note on the monthly report that verification, including a brief description of the supplier's rationale for non-compliance tests and disposition of the affected material.
- (d) Verify that the supplier of the emulsified asphalt, cutback asphalt, or asphalt filler is shown on the list of Qualified Bituminous Material Sources, [FS 1015 Table 1](#) of this Manual.
- (e) Check the required company certified emulsified asphalt, cutback asphalt, or asphalt filler tank

and/or blender test results for specification compliance, initial and date the certification, then send one copy to the Chemical Laboratory Director.

1015.3.2 Sampling.

1015.3.2.1 The size of sample and type of container is:

Cutback Asphalt -	1 quart [1 L], screw top can.
Asphalt Filler -	1 quart [1 L], friction top or screw top can.
Emulsified Asphalt -	1 gallon [4 L], plastic container.
Performance Graded - Asphalt Binder -	1 quart [1 L], friction top can

Type RC and MC cutback asphalts are to be packaged, labeled, and marked as described in [General Sec 3](#) of this Manual.

1015.3.2.2 Samples of bituminous material may be obtained by the dipper, three-level, or all-level methods, or from drain cocks on the side of the tank if available. When using the dipper method, sufficient portions are to be taken to insure that a representative sample has been obtained when these portions are combined and thoroughly mixed for a test sample. The three-level method is used to obtain portions near the bottom, center and top of the tank by means of a sampling thief and combining these portions for a test sample. In the all-level method, the thief is placed near the bottom of the tank, the stopper removed and the thief raised so that it becomes full just before reaching the surface of the material. To insure a representative sample when using the drain cock method, before taking the sample, sufficient material shall be allowed to flow through the drain cock and discarded, to insure a representative sample. Care is to be taken to avoid contamination of the samples while cleaning the container. Do not immerse the container in a cleaning solvent or water.

1015.3.3 Acceptance.

1015.3.3.1 All performance graded asphalt binder will be accepted on the basis of the supplier's certification statement as shown in Specification Sec. 1015 and on the basis of the supplier's approved status on the [list of Qualified PG Binder Sources and Labs](#). Asphalt emulsions, cutback asphalt, and asphalt filler will be accepted on the basis of supplier certification in accordance with Specification Sec 1015 and any applicable special provisions, and on the basis of the supplier's approved status on the list of [Qualified Bituminous Material Sources](#). Railroad shipments are to be accepted only after notification from the Chemical Laboratory Director.

1015.3.3.2 In case the tests on a random sample indicate that the material does not comply with the specifications, the Chemical Laboratory Director is to immediately notify the district Operations Engineer.

1015.4 SUSPENSION OR WITHDRAWAL OF SOURCE APPROVAL.

1015.4.1 All suppliers are required to have an adequate testing laboratory and to perform all tests required by the specification for the material being furnished. When test results certified by the supplier are not representative of the material shipped, source approval will be suspended and may be withdrawn. Any other cases of non-compliance with MoDOT specifications, such as failure to properly certify all shipments, will be cause for suspension or withdrawal of source approval.

1015.4.2 The District may suspend or withdraw approval of a source, only with concurrence from the State Project Operations Engineer-Materials for failure of a supplier to comply with the specifications, failure to run the proper quality control tests, or failure to have the required equipment to perform the

necessary tests. In all cases of suspension, withdrawal of source approval and subsequent reinstatement, the supplier will be notified by letter from the State Project Operations Engineer-Materials, with a copy to the district. The district Operations Engineer is to advise the State Project Operations Engineer-Materials when any inadequacies occur at the supplier's plant.

1015.4.3 Upon suspension of source approval, the district shall contact the Chemical Laboratory Director regarding inspection procedures which will typically include district sampling and the Chemical Laboratory approving each tank or lot of materials, prior to release for shipment. Upon withdrawal of source approval, that source will be removed immediately from the qualified list for the material(s) affected and these materials shall not be accepted for MoDOT use.

1015.4.4 Depending on the problem, suspension or withdrawal of source approval may be for individual materials, groups of materials or the entire source. The district handling inspection at that source is responsible for assuring that only material from approved lots or tanks is being shipped to department work. The source district shall immediately notify the appropriate department personnel in Maintenance and/or Business and Benefits, as well as the Chemical Laboratory Director, if a supplier ships unapproved material. Since source suspension is normally temporary, but will not result in name removal, this notice and oversight is critical. Source withdrawal depends primarily on final material (non-) acceptance procedures as a control.

1015.5 REPORT.

1015.5.1 Report of Laboratory test results on daily asphalt plant samples will not be distributed unless specifically requested and conditions warrant this information for a specific purpose.

1015.5.2 Shipments of cutback asphalt, asphalt filler and emulsified asphalt to projects are to be reported in SiteManager by the inspector (typically the project inspector) accepting delivery or use of the material, based on the approved project receipt invoice information. Information recorded in SiteManager shall include the material's identification, source and source location, invoice date, invoice number, tank, and quantity. Shipments of cutback asphalt and emulsified asphalt for Maintenance purchase orders are to be accepted on the basis of the supplier's approved status on the qualified list and the required certifications or Central Laboratory test report. Reporting of these shipments is not required, however, it is the responsibility of the district responsible for inspection at the source to immediately notify the appropriate personnel in Maintenance and/or Business and Benefits any time a supplier's approved status changes.

1015.5.3 Shipments of performance graded asphalt binder may be to be accepted on the basis of an approved quality control plan submitted by the manufacturer and on the manufacturer's approved status on the [list of Qualified PG Binder Sources and Labs](#).

1015.5.4 The bills of lading, manifests, or truck tickets for cutback asphalt, asphalt filler and emulsified asphalt shall be retained in the district office for 2 years.

1015.5.5 A review of each plant inspector's daily report shall be performed at regular intervals, not to exceed one week and the person checking the report is to initial the report in the upper right corner of the report. Review consists of verifying that enough shipping tickets are shown to account for the amount of binder used, that the binder came from an approved supplier, and that the supplier is approved to supply the binder type shown.

1015.5.6 If the plant inspector's daily report does not contain the date, tonnage, invoice numbers, binder grade, or source identification, the district Operations Engineer should be notified.